

Client's Ref.:  
File: 7084-A21007PCTUS/Chiumeow/Kevin revised/f1

**What is claimed is:**

1        1. A prophy chip, mounted on the top of a dental  
2 rotary instrument for cleaning, polishing, and burnishing  
3 teeth, comprising:  
4        a hollow cup-shaped core with canopy (semispherical),  
5 cylindrical, cupped, conical, inverted conical, or disk  
6 profile;  
7        a shaft containing a connecting means for connecting  
8 the prophy chip to the dental rotary instrument to avoid  
9 vibration around the rotation axis of the core during  
10 rotation;  
11        a hydrophilic grindstone sponge covering the core,  
12 wherein the hydrophilic grindstone sponge comprises a  
13 grindstone therein; and  
14        a shank-equipped or undulated latch plate fixing the  
15 hydrophilic grindstone sponge by folding the edge thereof  
16 into the interior or the bottom of the core, or for  
17 gripping;  
18        wherein the hydrophilic grindstone sponge is immersed  
19 in water prior to operation or absorbed saliva during  
20 operation without using a polishing paste to dissipate heat  
21 generated by friction.

1        2. The prophy chip as claimed in claim 1, wherein the  
2 hydrophilic sponge is hydrophilic latex sponge, or  
3 polyurethane sponge, and the hydrophilic latex sponge or the  
4 hydrophilic polyurethane sponge comprises a grindstone of  
5  $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$  or  $\text{Ca}_{10}(\text{PO}_4)_6\text{F}_2$  as a wet grindstone sponge  
6 covering the core.

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1           3.    The prophy chip as claimed in claims 1 or 2,  
2    wherein the hydrophilic sponge further comprises at least  
3    one water soluble agent consisting of a foaming agent, a  
4    sweetener, a fragrance, a medicament for inhibiting or  
5    preventing periodontal diseases or dental caries, or a  
6    coating agent.

1           4.    The prophy chip as claimed in claims 1 or 2,  
2    wherein the core is reticular or porous and at least one  
3    water soluble agent consisting of a foaming agent, a  
4    sweetener, a fragrance, a medicament for inhibiting or  
5    preventing periodontal diseases or dental caries, or a  
6    coating agent is disposed in the hollow portion of the core,  
7    or the core is filled with a water-retaining sponge immersed  
8    in the water soluble agent, wherein the water soluble agent  
9    is releasable from the surface of the hydrophilic grindstone  
10   sponge covering the core.

1           5.    The prophy chip as claimed in any one of claims 1-  
2    4, wherein the outside of the core is nonwoven to maintain  
3    the grindstone and has hydrophilicity and flexibility.

1           6.    The prophy chip as claimed in any one of claims 1-  
2    4, wherein the outside of the sponge covering the core is a  
3    three-dimensionally continuous, porous film for conducting a  
4    solution        from        a       flexible       polishing       agent.